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SNOW SURVEYS AND IRRIGATION WATER FORECASTS

for the

RIO GRANDE DRAINAGE BASIN

March 1, 1940

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Soil Conservation Service
Division of Irrigation
In Cooperation with
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Colorado State College
Fort Collins, Colorado

March 10, 1940

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RIO GRANDE BASIN

March 1, 1940

The following data pertaining to snow surveys and irrigation water-supply forecasts are provided by the Division of Irrigation, Soil Conservation Service of the U. S. Department of Agriculture, in cooperation with other Federal Bureaus, State Departments, and local organizations. The snow measurements are made principally by field personnel of the U. S. Forest Service and Colorado State Engineer. This work is otherwise conducted cooperatively with the State Engineers of Colorado and New Mexico, Colorado Agricultural Experiment Station, and various municipalities, irrigation associations and others. Precipitation records are supplied by the U. S. Weather Bureau.

P R E C I P I T A T I O N D A T A

WATERSHED	STATE	Precipitation October 1 to February 29	Departure from Normal	Precipitation February	Departure from Normal
		Inches	Inches	Inches	Inches
Canadian	New Mexico	3.03	-0.16	0.91	-0.40
Rio Grande	Colorado	4.70	-0.36	2.31	+1.20
Rio Grande	New Mexico	5.18	+0.01	1.46	+0.30
Pecos	New Mexico	3.62	+0.12	0.91	+0.28

SUMMARY OF MARCH 1 SNOW SURVEYS AND COMPARISON OF DATA WITH THAT OF PREVIOUS YEARS BY WATERSHEDS

WATERSHEDS	Snow Depth		Water Content		Number Courses Report- ing 1940	Snow Density		1940 Water Content in percent of	
	Five Year Avg.*	1939	1940	Five Year Avg.*		Five Year Avg.*	1940	Five Year Avg.*	1939
	In.	In.	In.	In.		Percent	Percent	Percent	
Rio Grande	31.2	33.5	27.9	8.7	20	28	28	90	90
Canadian River	16.0	18.2	19.0	4.6	2	29	31	126	132

*Some for shorter periods.

Precipitation in New Mexico and in the San Luis Valley in Colorado during February was above normal, which resulted in a considerable increase in the snow cover over the mountain areas during the month. On March 1 the water content of the snow on the watershed of the Rio Grande in Colorado and New Mexico, as shown by measurements on 20 courses, was 7.8 inches. Last year at this time it was 8.7 inches. For the watershed of the Canadian River the water content of the snow, based on measurements on 2 courses, was 5.8 inches, on March 1, and last year it was 4.4 inches. Summaries of the data are given in the accompanying tables.

The moisture content of the surface soil increased during February, but subsoil moisture is still deficient. Stream flow and reservoir storage is below normal. Although conditions have improved during the month, more snow is needed in the mountain areas to insure normal runoff this summer.

RIO GRANDE WATERSHED

Summary of Federal and State Cooperative Snow Surveys
Issued March 10, 1940, at Fort Collins, Colo.

Main Drainage and No. Snow Course	Local Drainage	State	Location		Elev.	National Forest	Mar. 1 Snow Course Measurements				
			Locality	Descrip- tion			Avg.	Snow Depth	Av. Water Content		
							In.	1939	1940	In.	In.
RIO GRANDE											
26	Wolf Creek Pass	Colo.	Wolf Cr. Pass	4-37N-2E	10000	Rio Grande	74.0	67.2	53.0	22.4	19.7
27	Upper Rio Grande	"	Rio Grande Res.	13-40N-4W	9350	"	22.8	19.0	16.5	4.9	4.4
47	Silver Lakes	"	1mi. S. Silver L.	15-36N-5E	9600	"	22.4	26.0	14.3	4.5	4.4
49	River Springs	"	10mi. W. Mogote	25-33N-6E	9300	"	28.3	29.2	17.4	7.1	6.6
74	LaVeta Pass #2	"	LaVeta Pass	22-28S-70W	9300	San. CristoGr.	34.4	43.8	34.0	7.9	10.3
75	Ute Ridge	"	Rio Grande Res.	31-41N-4W	9700	Rio Grande	--	20.9	--	--	5.1
76	Summitville	"	Summitville	30-37N-4E	11500	"	53.0	54.0	52.0	14.0	14.1
77	Gumbres Pass #2	"	Gumbres Pass	17-32N-5E	10000	"	69.7	80.7	57.7	23.2	22.8
80	Santa Maria	"	Santa Maria Res.	41N-2W	9700	"	13.6	16.6	10.6	3.0	3.7
82	Culebra R.	"	12mi. E. San Luis	37-2N105-2W	10000	San. CristoGr.	--	--	40.3	--	11.2
84	Fort Garland	"	6mi. N. Ft. Garland	3-29N-72W	8200	"	--	--	12.1	--	3.0
1	Red River	N. Mex.	6mi. SE. Red River	29-28N-15E	9500	Carson	27.9	24.9	26.3	7.9	7.1
2	Taos Canyon	"	14mi. E. Taos	10-25N-15E	9000	"	18.8	19.6	20.5	5.7	5.8
4	Aspen Grove	"	10mi. NE. Santa Fe	12-18N-10E	9100	Santa Fe	19.6	30.7	22.0	4.6	7.3
5	Lee Ranch	"	5mi. NW. Bland	3-18N-4E	9050	"	24.6	28.9	24.8	6.0	6.3
6	Canjilon	"	8mi. NE. Canjilon	4-26N-6E	9500	Carson	48.8	50.7	50.0	17.0	17.3
7	Rio Nutrias	"	10mi. SE. Parkview	6-27N-5E	7900	"	17.3	20.6	17.0	4.8	4.3
8	Panchuela Cr.	"	1mi. N. Cowles	34-19N-12E	8500	Santa Fe	12.2	20.9	16.7	3.4	4.8
9	Hematite Park*	"	3mi. SE. Red R.	8-28N-15E	9500	Carson	20.2	18.9	26.2	5.7	4.1
12	Tres Ritos	"	7mi. W. Holman	23-22N-13E	9000	"	22.3	31.1	28.0	5.9	8.3
15	Pay Role	"	4mi. SE. Hopewell	16-28N-7E	10000	"	--	--	--	--	--
16	Jicarilla	"	15mi. S. Dulce	9-29N-1W	8500	Jicarilla Res.	--	--	--	--	--
17	Chama Divide	"	6mi. W. Chama	36-9N106-7W	7750	Off Forest	--	--	19.4	--	--
			Average for Drainage				31.2	33.5	27.9	8.7	8.7
CANADIAN											
9	Hematite Park	N. Mex.	3mi. SE. Red R.	8-28N-15E	9500	Carson	20.2	18.9	26.2	5.7	4.1
10	Ocate Mesa	"	3mi. E. Black L.	25-24N-16E	9200	Off Forest	11.8	17.4	11.9	3.4	4.6
			Average for Drainage				16.0	18.2	19.0	4.6	4.4

*On adjacent Drainage

•Readings on original course.

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